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SCIENCE:

A WEEKLY RECORD OF SCIENTIFIC PROGRESS.

JOHN MICHELS, Editor.

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SATURDAY, OCTOBER 30, 1880.

SMYTH'S *Celestial Cycle* in its day was probably the most valuable companion which had at that time been prepared for the use of amateur astronomers. The second volume is known as the *Bedford Catalogue*, and contains an excellent list of the most interesting double stars, nebulae and clusters, with descriptions, and much other valuable information. When published, this *Catalogue* was received with such favor that the Royal Astronomical Society bestowed upon its author a gold medal. In presenting the medal, the president of the Society, Sir G. B. Airy, called attention to the fact that the original observations upon which the *Catalogue* was based had not been placed at the command of the Society, and hoped that such would be done at no distant period. A careful examination of the *Cycle* now shows that it is full of inaccuracies. Mr. Burnham called attention to these some years ago, but the subject attracted no general attention until a paper by Mr. Herbert Sadler, a member of the Council of the Royal Astronomical Society, appeared in the *Monthly Notices* for January, 1879, in which Mr. Sadler used language which might easily be construed into a charge of dishonesty on the part of Captain Smyth. The words actually used were as follows:

"I have thought it better, therefore, as the charge I have brought against the *Bedford Catalogue* is of a very serious character, to place an asterisk against the symbol of the observer whose erroneous measure Smyth appears to have followed, so that anyone may be able to detect the source of Smyth's error at a glance in cases where he has presumably copied the measures of others."

This criticism raised a perfect storm in the Society.

As Mr. Burnham had originally called attention to the inaccuracies of the *Cycle*, he immediately set to work re-observing the stars of the *Bedford Catalogue*, and has published his results in the June number of the *Monthly Notices*. This paper contains about 350 measures of 148 stars, which he has compared with the measures of Captain Smyth. Mr. Burnham divides these stars into two classes: Those which had and those which had not been carefully measured by any

other observer up to the time of the publication of the "Cycle of Celestial Objects;" and concludes that the measures of the former class are in the main correct, while those of the latter class are either roughly approximate or grossly inaccurate; in fact, are not micrometrical measures at all in the usual sense of the term. In explanation of the remarkable character of the "Cycle" measures Mr. Burnham says:

"We know that the observations in the *Bedford Catalogue*, which, so far as the double stars are concerned, could have been easily made in one year, are scattered over a series of years. It may, I think, be fairly assumed that they were made in leisure moments, without that care which a more zealous and experienced observer would bestow; with no definite idea of their publication and use; and as an amusement rather than as a serious astronomical work. If we assume that at the beginning the observer made it a practice, in measuring double stars, of setting the micrometer wires in accordance with the previous measure of other observers, for the purpose of identification, or for some other reason, and with the intention of making such changes in the wires as the appearance of the object seemed to warrant, we have at once a complete explanation of the very close agreement with other measures." This explanation seems reasonable and implies no dishonesty on the part of Captain Smyth.

Immediately following Mr. Burnham's paper is one by Mr. Knobel, who calls attention to the fact that the majority of these so-called measures have a weight assigned, and that Captain Smyth repeatedly asserts that such are mere guesses. Mr. Knobel accounts for many of the discrepancies in position angles by errors in computation.

Both of these interesting papers give a pretty clear insight into the *Bedford Catalogue*; and, although it is undoubtedly true that the principle upon which it secured the medal of the Royal Astronomical Society was a wrong one, as the Astronomer Royal showed at the time of presentation, still in its preparation Captain Smyth performed a useful service, and all lovers of astronomy will be glad to know that Mr. Chambers is preparing a new edition which will embody the progress of astronomy up to 1880.

THE United States Fish Commission has completed its summer's work at the Newport Station, and its parties have returned to Washington. The Fish Hawk, the steamer of the Commission, is now at Wilmington receiving the remainder of its fish-hatching apparatus for use during the winter.

The work has been successful beyond any expectations. Among the acquisitions of three days' work on the edge of the Gulf Stream were fifteen new species of fishes, one hundred and seventy-five species of mollusks, of which one hundred and fifteen were new to southern New England, sixty-five new to America, and thirty or more undescribed. Corresponding acquisitions have been made in other branches of marine zoology.

THE next United States Congress will act on a bill, reported in the last Congress, in support of an International Commission to agree on standard tests for color blindness and standard requirements for visual power in navies and merchant marines. Dr. R. Joy Jeffries, A. M., of 15 Chestnut street, Boston, Mass., will be glad to have public or private statistics or information in relation to this subject.

The attention of those interested in Hygiene reform is directed to the Hygiene Convention and Exhibition of inventions, mechanical contrivances and processes relating to sanitary and household economies to be held at Wellesley, Mass., commencing November 3rd, and ending November the 9th.

A most attractive programme has been arranged, which reflects the highest credit on those who have organized the arrangements. Tickets and programmes can be obtained at the St. Nicholas Hotel, New York; Hotel Wellesley, Wellesley, Mass., or of the Executive Committee, 158 Tremont Street, Boston, Mass.

THE COMETS.

There are now four comets visible with a good telescope, but none of them can be seen with the naked eye. They are all growing fainter, and after a few weeks they will become invisible, even in the most powerful telescopes.

The first is the one discovered by Mr. Schærbele at Ann Arbor, Michigan. This is in the morning sky, and its position for November 4 will be:

A. R. = 5 h. 18.9 m. Decl. South = $7^{\circ} 33'$.

The second is the one discovered by Mr. Hartwig, at Strasburg, Germany; and also, independently, on the next night by Professor Harrington, of Ann Arbor, Michigan. The position of this comet on November 2 will be:

A. R. = 18 h. 21.7 m. Decl. North = $9^{\circ} 59'$.

It is thought by Professor Winnecke that this comet is a return of the one of 1506.

The third is the comet discovered by Mr. Lewis Swift, at Rochester, New York, on October 10. This is a faint object, and its position on November 2 will be nearly as follows:

A. R. = 22 h. 0.0 m. Decl. North $34^{\circ} 15'$.

No orbit of this comet has been computed.

The fourth comet is the one with a period of seven and a third years, and known as Faye's, having been discovered by M. Faye, of Paris, in 1843. The orbit of this comet has been investigated in an admirable manner by Professor Axel Moeller, of Lund, Sweden, and its motion is nearly as well known as that of a planet. The ephemeris furnished by Professor Moeller for the present return is almost exactly correct. The position of this comet for November 2 will be:

A. R. = 22 h. 53.5 m Decl. South = $0^{\circ} 25'$.

Since this comet is always at a great distance from the sun, it is a faint object, even on the most favorable occasions. It will soon be invisible except in the larger telescopes.

Washington, Oct. 28, 1880

A. HALL.

ETHNOLOGY.*

FRAGMENTARY NOTES ON THE ESKIMO OF CUMBERLAND SOUND.

BY LUDWIG KUMLIEN.

III.

Since whalers began to cruise in the Cumberland waters, they have found that it is decidedly to their advantage to hire boats' crews of natives to assist in the capture of whales. They make good whalers. When such crews are secured, they wisely count in all of their family in the bargain, so that to secure the services of a crew of seven men one must feed thirty or more. While working for whalers, the Eskimo depend almost wholly on the ship for their food supply; as a consequence, they are fast becoming poor hunters and prefer to lounge around a vessel and pick up such scraps as offer themselves rather than to strike out for themselves and live independently and in comparative plenty.

As to meals, or regular meal-times, they eat when hungry, if they have anything. They always eat in the morning before going out to hunt; but the principal meal is in the evening, on their return. When supplied with rations by the ships, they often have their regular meals aboard; but this does in no wise hinder them from taking their usual evening allowance of raw meat when they return to their huts.

That the Eskimo possess considerable powers of abstinence cannot be disputed; but it is not so remarkable after all, for they certainly have had ample experience in this direction. That they are able to bear temporary or sustained exertion better than the whites is doubtful. They are acclimated and have clothing suited to the climate, and readily adapt themselves to the rude shelter of a snow-bank, if necessary; but give a healthy white man as good clothes, and he will stand as much fatigue, and perhaps more.

While hunting with the Eskimo, we often had our noses and faces frozen, when the cold did not seem to affect the Eskimo in the least; but when it came to a tramp through the snow all day long, few of them would stand it any better than we could.

Some have judged their powers of endurance from the manner in which they will follow their game; but it seems to us that it is rather their wonderful patience, for we have known them to follow animal tracks for a whole day, when we confess we could not discover the faintest trace of a track, except at long distances apart. They will discover many traces of animals on the snow that a white man would pass by and not notice. When traveling either on the ice or water, they make the journey by short, easy stages, stopping as soon as they feel the least tired, and recruiting; if

* Bulletin (15) of the United States National Museum. Contributed to the Natural History of Arctic America, made in connection with the Howgate Polar Expedition, 1877-78.